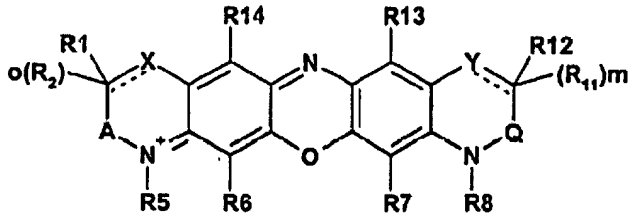
Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the specification:

Listing of Claims

1. (original) Compounds of formula I



(I)

wherein

X and Y represent CH, CH_2 or a divalent or trivalent heteroatom under the proviso that X and Y are not simultaneously CH or CH_2;

m and o represent independently of each other 0 or 1, with the proviso that

if m is 0 then the dotted line between Y and the neighboring C atom represents a bond and Y is CH or a trivalent heteroatom,

if m is 1 then the dotted line between Y and the neighboring C atom is absent and Y is CH_2 or a divalent heteroatom,

if o is 0 then the dotted line between X and the neighboring C atom represents a bond and X is CH or a trivalent heteroatom,

if o is 1 then the dotted line between X and the neighboring C atom is absent and X is CH_2 or a divalent heteroatom;

A represents $(CR_3R_4)_p$ and Q represents $(CR_9R_{10})_n$;

n and p represent independently of each other 0 or 1;

R_6, R_7, R_{13}, and R_{14} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylSO_2, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$;

R_1, R_2, R_3, R_4, R_9, R_{10}, R_{11} and R_{12} denote independently of each other hydrogen, (C_{1-4})alkyl, carboxy, (C_{1-4})alkoxy carbonyl or (C_{1-4})alkoxy, or, when X is CH or CH_2 then R_1 and R_2 can also be OH or $NR_{15}R_{16}$, or when Y is CH or CH_2 then R_{11}, R_{12} can also be OH or $NR_{15}R_{16}$;

R_5, R_8, R_{15} and R_{16} are independently of each other hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, $R_{17}OC(O)$-(C_{1-4})alkyl or (reactive group)-(C_{1-4})alkyl; and

R_{17} represents hydrogen or (C_{1-4})alkyl;

in free base or acid addition salt form.

2. (original) A compound of formula I according to claim 1 in free base or acid addition salt form wherein X is O, S or CH_2 and Y is O, S or CH_2 with the proviso that X and Y are not both simultaneously CH_2.

3. (original) A compound of formula I according to claim 1 wherein said compound is selected from

4,8-dimethyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride;

8-ethyl-4-methyl-2,3,4,9,10,11-hexahydro-1,6-dioxa-4,13-diaza-8-azonia-pentacen chloride;

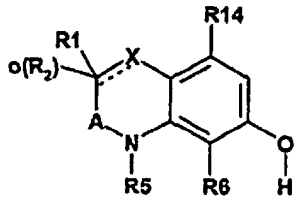
4,8-dimethyl-3,8,9,10-tetrahydro-2H-1,6,11-trioxa-8,13-diaza-4-azonia-pentacen tetrafluoroborate;

4,8-dimethyl-2,3,9,10-tetrahydro—4H-1,6-dioxa-11-thia-4,13-diaza-8-azonia-pentacen chloride; and

8-(3-ethoxycarbonyl- propyl)-4-methyl-3,8,9,1 0-tetrahydro-2H-1,6,1 1-trioxa-8,1 3-diaza-4-azonia-pentacen chloride.

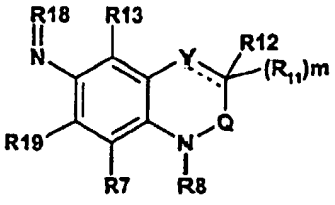
4. (currently amended) A composition comprising a compound according to of ~~any one of claims 1-3~~ claim 1 and a pharmaceutically acceptable excipient or diluent.

5. (original) A process for the production of a compound of formula I or a salt thereof, comprising the steps of reacting a phenol derivative of formula III



(III)

wherein the radicals and symbols A, X, R_1, R_2, R_5, R_6, R_{14} and o have the meanings as defined in claim 1 for a compound of formula I, with a nitroso or diazo compound of formula IV



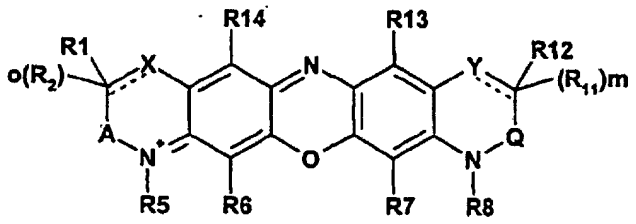
(IV)

wherein the radicals and symbols Q, Y, R_7, R_8, R_{11}, R_{12}, R_{13} and m have the meanings as defined in claim 1 for a compound of formula I, R_{18} represents oxo or p-nitrophenyl-N= and R_{19} represents hydroxy;

and recovering the resulting compound of formula I in free base form or in form of an acid addition salt.

6. (original) A method of labeling target structures in the brain comprising:

(i) applying a composition comprising a compound of formula I



(I)

wherein

X and Y represent CH, CH_2 or a divalent or trivalent heteroatom under the proviso that X and Y are not simultaneously CH or CH_2;

m and o represent independently of each other 0 or 1, with the proviso that

if m is 0 then the dotted line between Y and the neighboring C atom represents a bond and Y is CH or a trivalent heteroatom,

if m is 1 then the dotted line between Y and the neighboring C atom is absent and Y is CH_2 or a divalent heteroatom,

if o is 0 then the dotted line between X and the neighboring C atom represents a bond and X is CH or a trivalent heteroatom,

if o is 1 then the dotted line between X and the neighboring C atom is absent and X is CH_2 or a divalent heteroatom;

A represents $(CR_3R_4)_p$ and Q represents $(CR_9R_{10})_n$;

n and p represent independently of each other 0 or 1;

R_6, R_7, R_{13}, and R_{14} denote Independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylSO_2, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$;

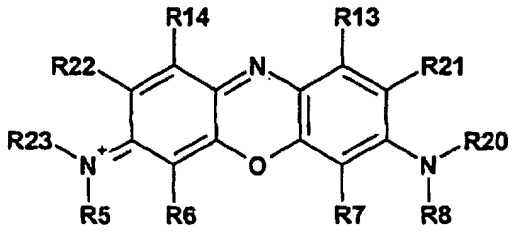
R_1, R_2, R_3, R_4, R_9, R_{10}, R_{11} and R_{12} denote independently of each other hydrogen, (C_{1-4})alkyl, carboxy, (C_{1-4})alkoxy carbonyl or (C_{1-4})alkoxy, or, when X is CH or CH_2 then R_1 and R_2 can also be OH or $NR_{15}R_{16}$, or when Y is CH or CH_2 then R_{11}, R_{12} can also be OH or $NR_{15}R_{16}$;

R_5, R_8, R_{15} and R_{16} are independently of each other hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, $R_{17}OC(O)$-(C_{1-4})alkyl or (reactive group)-(C_{1-4})alkyl; and

R_{17} represents hydrogen or (C_{1-4})alkyl;

in free base or acid addition salt form,

or of formula II



(II)

wherein

R_6, R_7, R_{13}, and R_{14} denote independently of each other hydrogen, halogen, (C_{1-4})alkyl, (C_{1-4})alkylSO_2, SO_3H, carboxy, (C_{1-4})alkoxy carbonyl, (C_{1-4})alkoxy, OH or $NR_{15}R_{16}$, and

R_{21} and R_{22} are hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, phenyl, phenylalkyl, carboxy or halogen;

R_{14} and R_{22} together with the carbon atoms to which they are attached can also form a saturated or unsaturated ring;

R_{21} and R_{13} together with the carbon atoms to which they are attached can also form a saturated or unsaturated ring;

R_5, R_8, R_{20} and R_{23} are hydrogen, (C_{1-4})alkyl, (C_{1-4})alkoxy, polyoxyhydrocarbyl, phenyl, phenylalkyl;

R_8 and R_{20} together with the nitrogen atom to which they are attached can form a saturated or unsaturated ring,

R_{23} and R_5 together with the nitrogen atom to which they are attached can form a saturated or unsaturated ring,

R_{22} and R_{23} together with the atoms to which they are attached can form a saturated or unsaturated ring,

R_5 together with R_6 together with the atoms to which they are attached can form a saturated or unsaturated ring,

R_7 together with R_8 together with the atoms to which they are attached can form a saturated or unsaturated ring,

R_{20} together with R_{21} together with the atoms to which they are attached can form a saturated or unsaturated ring,

(ii) allowing sufficient time for said compound to be chemically associated with the target structure in the brain, and

(iii) detecting said compound using near-infrared radiation.

7. (original) The method according to claim 6 wherein said target structures are amyloid plaques.

8. (original) The method according to claim 7 for identifying diseases related to amyloid plaque generation and/or aggregation.

9. (original) The method according to claim 7 ~~or claim 8~~ for identifying Alzheimer's disease.

10. (currently amended) Use of a compound of formula I according to ~~any one of claims 1-3~~ claim 1 in free base or acid addition salt form as a near-infrared imaging agent.

11. (original) Use of a compound of formula II as defined in claim 6 as a near-infrared imaging agent.

12. (original) Use according to claims 10 ~~or 11~~ as a near-infrared imaging agent to image amyloid plaques.

13. (currently amended) A conjugate comprising a compound of formula I according to ~~any one of claims 1-3~~ claim 1 covalently linked to a biomolecule through a reactive group.

14. (original) A conjugate according to claim 13 wherein the biomolecule is selected from the group consisting of nucleoside, nucleotide, oligonucleotide, nucleic acid, protein, peptide, amino acid, polysaccharide, oligosaccharide, monosaccharide, drug or a small molecule having a molecular weight of less than 500.

15. (original) A conjugate according to claim 13 ~~or 14~~ capable of being detected using near-infrared radiation.